YORK®
Heating and Air Conditioning

TECHNICAL GUIDE

SINGLE PACKAGE AIR CONDITIONING

WATER COOLED

MODELS: CU060 - 300 5-25 TONS VERTICAL

MODELS: CH060 - 5-10 TONS HORIZONTAL

FOR DISTRIBUTION USE ONLY - NOT TO BE USED AT POINT OF RETAIL SALE

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DESCRIPTION

These units are completely assembled, piped, wired, charged and tested at the factory and are shipped ready for immediate installation. Only the power supply wiring, the thermostat wiring, the condenser water piping, the condensate drain piping and the ductwork are required to complete the installation.

Units include a one-year limited warranty on all replacement parts and a five-year limited warranty on each compressor.

APPLICATION FLEXIBILITY

These ìcooling onlyî units can be applied with:

1. Cooling towers.
2. Well or surface water providing the temperature and the GPM of the water meet the application limitations of the unit.
3. Brackish or salt water and a secondary heat exchanger.

They can be installed:

1. Within the conditioned space as ìfree standingî units without any ductwork. Supply air plenum and return air grille accessories are available for these freestanding applications.
2. In an equipment room with both supply and return air ductwork

GENERAL

Horizontal (CH) units are designed for suspended mounting. HWC models are shipped with ëstraight-throughí evaporator fan discharge as standard. Airflow orientation is field convertible to side discharge. Vertical (CU) units are designed for free-standing floor mounting. All units are completely factory wired and pre-piped. Water supply, water outlet, and condensate drain connections are via female pipe thread fittings.

All models 5 -25 tons ship as factory-charged unitized packages. The 5 -15 ton units may be field split between the evaporator /compressor section and the upper blower section; installation is possible through standard height doorways and elevators. All packages are designed for free-standing floor mounting. All models are shipped with vertical evaporator fan discharge as standard. Units are completely factory wired and piped. Dual circuit models feature internally manifolded condensers.

CABINET

All cabinets are completely constructed of 18 Ga. corrosion resistant "Galvalume" coated steel. The entire unit interior (both evaporator and condensing section) is insulated with 1/2" thick, 2 lbs. density insulation. Service panels are equipped with lifting handles for ease of removal and handling. Duct flanges for return air intake and evaporator discharge are provided with the unit, for field installation. Duct flange on CU240 evaporator return is incorporated into the filter frame.

REFRIGERATION CIRCUITS

All models utilize "Scroll" type hermetic compressors. Compressors are mounted on rubber isolators to minimize vibration transmission. Internal overload protection is provided. External high pressure and low pressure cutout switches are included in each compressor control circuit. The 5 ton units have a single refrigeration circuit. The 8 -20 ton units feature two independent refrigeration circuits. Each refrigeration circuit includes an adjustable thermal expansion valve (with external equalizer), liquid line filter drier, sight glass/moisture indicator, and service gauge ports.

The evaporator coils are constructed of internally enhanced copper tubes mechanically bonded to rippled aluminum plate fins. The evaporator coil is employed in a draw-through configuration, and features inter-laced circuiting. Large evaporator coil face area minimizes potential water blow-off.

The high-efficiency tube-in-tube condensers feature a convoluted inner tube design for optimum performance. Standard models feature a copper inner tube surrounded by a steel outer tube, and carry a 400 psig working pressure rating.

INDOOR FANS

Forward curved, double inlet and double width centrifugal blowers are used for evaporator air movement. Large diameter wheels are employed to provide required airflow performance at minimum rpm and noise levels. Blower wheels are fabricated of galvanized steel. Blowers employ solid steel shafts, supported in permanently lubricated ball bearings. All blowers are belt driven. Variable-pitch motor sheaves allow for field adjustment of blower rpm.

ELECTRICAL/CONTROLS

All units are completely factory wired with all necessary controls. Manual reset protection is provided on evaporator blower motors. A manual reset circuit is also provided on each compressor control circuit in the event of high/low pressure cutout. A 24 volt control circuit, with oversize transformer, is provided for field connection. Units are designed to operate with conventional thermostat control interface.

FILTERS

All models are shipped with 2 inch thick medium-efficiency throwaway filters factory installed. Filters are accessible from either front or right side on 5-15 ton models. The CU240 filter rack is external to the cabinet (shipped loose).

TABLE 1: GENERAL DATA - CH060-120 5-10 TON HORIZONTAL MODELS

Model	**CH060**	**CH096**	**CH120**
Nominal Cooling(Ton)	5	8	10
Cooling Performance			
Gross Cooling Capacity(Btuh)	64100	101800	126000
Design CFM	2000	3200	4000
EER	13.3	13.4	12.0
Compressor-Type	Scroll		
Number Used	1	2	2
Evaporator Coil-Type	Copper Tubes, Aluminum Fins		
Face Area(sq ft)	5.28	9.17	9.17
Rows/FPI	3/13	3/13	3/13
Condenser-Type	Coaxial		
Number Used/Tons Capacity	1/5	2/4	2/5
Nominal Water flow rate (gpm)	15	24	30
Condenser Water Connections	1" FPT	1-1/4" FPT	1-1/4" FPT
Evaporator Fan-Type	Centrifugal, Forward Curved		
Number Used	1	2	2
Diameter x Width (in)	10x10	10x8	10x8
Drive	Adjustable Belt		
Motor HP (Standard/Oversize)	1/NA	1.5/2	2/3
Filters			
Number Used-Size(in)	2-20x20x2	2-20x25x2 1-20x20x2	2-20x25x2 1-20x20x2
Condensate Drain Connection	3/4FPT		
Weight	460	710	760

NOTE: Cooling performance is rated at 80∞F dry bulb 67∞F wet bulb entering air temperature, CFM listed, 85∞F entering 95∞F leaving water temperature, and water flow rate listed. Gross capacity does not include the effect of evaporator fan motor heat.

TABLE 2: GENERAL DATA CU 5-20 TON VERTICAL MODELS

Model	**CU060A**	**CU096A**	**CU120A**	**CU180A**	**CU240A**
Nominal Cooling(Ton)	5	8	10	15	20
Cooling Performance					
Gross Cooling Capacity(Btuh)	63300	100600	127800	188600	246800
Design CFM	2000	3200	4000	6000	8000
EER	12.5	13.2	12.5	12.0	11.5
Compressor-Type	Scroll				
Number Used	1	2	2	2	2
Evaporator Coil-Type	Copper Tubes, Aluminum Fins				
Face Area(sq ft)	5.00	9.37	10.50	15.11	19.00
Rows/FPI	3/12	3/12	3/13	3/12	3/14
Condenser-Type	Coaxial				
Number Used/Tons Capacity	1/5	2/4	2/5	2/7.5	2/10
Nominal Water flow rate (gpm)	15	24	30	45	60
Unit Water Connection Size	1" FPT	1-1/4" FPT	1-1/4" FPT	1-1/2" FPT	2" FPT
Evaporator Fan-Type	Centrifugal, Forward Curved				
Number Used	1	1	1	2	2
Diameter x Width (in)	12x9	15x12	15x12	15x9	15x11
Drive	Adjustable Belt				
Motor HP (Standard/Oversize)	1/1.5	1.5/2	2/3	3/5	5/7.5
Filters					
Number Used-Size(in)	2-20x16	4-14x25x2	6-14x20x2	2-16x20x2 4-16x25x2	6-20x25x2
Condensate Drain Connection	3/4FPT				
Weight					
Shipping	625	815	975	1350	1525

NOTE: Cooling performance is rated at 80∞F dry bulb 67∞F wet bulb entering air temperature, CFM listed, 85∞F entering 95∞F leaving water temperature, and water flow rate listed. Gross capacity does not include the effect of evaporator fan motor heat.

TABLE 3: GENERAL DATA CU 300 25 TON VERTICAL MODELS

Model	**CU300**
Nominal Cooling(Ton)	25
Cooling Performance	
Gross Cooling Capacity(Btuh)	322000
Design CFM	10000
EER	11.5
Compressor-Type	Scroll
Number Used	3
Evaporator Coil-Type	Copper Tubes, Aluminum Fins
Face Area(sq ft)	19.79
Rows/FPI	4/12
Condenser-Type	Coaxial
Number Used/Tons Capacity	3/7.5
Nominal Water flow rate (gpm)	78
Unit Water Connection Size	2 in FPT
Evaporator Fan-Type	Centrifugal, Forward Curved
Number Used	2
Diameter x Width (in)	15x11
Drive	Adjustable Belt
Motor HP (Standard/Oversize)	7.5/10
Filters	
Number Used-Size(in)	8-20x20x2
Condensate Drain Connection	3/4FPT
Weight	
Shipping	1825

NOTE: Cooling performance is rated at 80∝F dry bulb 67∝F wet bulb entering air temperature, CFM listed, 85∝F entering 95∝F leaving water temperature, and water flow rate listed. Gross capacity does not include the effect of evaporator fan motor heat.

TABLE 4: SUPPLY AIR BLOWER PERFORMANCE CH060-120, 5 TO 10 TON HORIZONTAL MODELS

		EXTERNAL STATIC PRESSURE - Inches W.C.																	
MODEL	SUPPLY	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8	
#	CFM	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	1800	846	0.41	936	0.48	1024	0.56	1107	0.64	1195	0.74	1259	0.82	1325	0.90	1400	0.99	-	-
CH060	2000	917	0.54	999	0.62	1079	0.71	1157	0.79	1233	0.89	1305	0.98	-	-	-	-	-	-
	2200	994	0.70	1069	0.79	1142	0.88	1214	0.98	-	-	-	-	-	-	-	-	-	-
	3000	810	0.65	900	0.78	986	0.91	1066	1.04	1143	1.17	1221	1.32	1294	1.48	1363	1.63	1433	1.79
CH096	3200	851	0.78	938	0.91	1018	1.04	1095	1.18	1170	1.32	1236	1.42	1305	1.56	1380	1.74	1447	1.90
	3400	892	0.91	974	1.05	1051	1.19	1125	1.33	1196	1.48	1266	1.64	1320	1.81	1390	1.90	-	-
	3600	927	1.05	1006	1.20	1081	1.34	1152	1.50	1220	1.65	1287	1.81	1353	1.98	1405	2.07	1472	2.17
CH120	4000	1012	1.40	1085	1.56	1153	1.73	1220	1.89	1283	2.06	1345	2.23	1405	2.41	1464	2.59	1522	2.78
	4400	1100	1.83	1166	2.00	1230	2.18	1292	2.37	1351	2.55	1410	2.74	1466	2.92	-	-	-	-
NOTE:																			
1. At higher evaporator airflows, and wet bulb conditions condensate carry-over may occur. Adjust airflow downward as necessary.																			
2. Values include pressure drop from wet coil and clean filters.																			
3. Shaded areas indicate oversize motors																			

TABLE 5: EVAPORATOR FAN PERFORMANCE - CU 5-25 TON VERTICAL MODELS

MODEL #	SUPPLY CFM	0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0		2.2		2.4		2.6		2.8		3.0	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
CU060	1800	791	0.46	872	0.53	948	0.60	1019	0.68	1090	0.76	1159	0.85	1193	0.89	1259	0.98	1321	1.07	1380	1.16	1437	1.25	1492	1.35	1544-	1.44-	-	-	-	-
	2000	860	0.60	935	0.69	1006	0.77	1077	0.85	1136	0.94	1199	1.03	1263	1.12	1324	1.22	1383	1.32	1440	1.42	1494	1.52	-	-			-	-	-	-
	2200	931	0.79	1001	0.88	1067	0.97	1129	1.06	1189	1.15	1247	1.25	1305	1.35	1363	1.45	1419	1.55	-	-	-	-	-	-			-	-	-	-
CU096	3000	568	0.70	628	0.81	688	0.92	746	1.05	801	1.19	855	1.35	906	1.50	954	1.65	1001	1.81	1046	1.97	-	-	-	-			-	-	-	-
	3200	594	0.82	651	0.94	707	1.06	762	1.19	816	1.33	867	1.49	917	1.65	964	1.81	1010	1.98	-	-	-	-	-	-			-	-	-	-
	3400	625	0.97	679	1.10	731	1.22	784	1.35	835	1.50	884	1.66	933	1.83	979	2.00	-	-	-	-	-	-	-	-			-	-	-	-
CU120	3600	620	1.04	666	1.16	716	1.29	765	1.43	815	1.56	864	1.71	912	1.88	958	2.00	1003	2.03	1046	2.41	1088	2.60	1129	2.78	1169	2.97	-	-	-	-
	4000	681	1.40	721	1.53	765	1.68	811	1.83	856	1.97	900	2.13	945	2.29	988	2.46	1030	2.65	1071	2.84	1112	3.05	-	-	-	-	-	-	-	-
	4400	726	1.77	760	1.91	797	2.05	837	2.21	878	2.38	919	2.54	960	2.70	1001	2.87	1040	3.05	-	-	-	-	-	-			-	-	-	-
CU180	5400	645	1.52	709	1.79	770	2.06	829	2.35	885	2.65	939	2.96	991	3.28	1042	3.61	1092	3.96	1140	4.32	1190	4.71	-	-	-	-	-	-	-	-
	6000	700	2.00	759	2.30	815	2.60	870	2.91	922	3.23	973	3.56	1022	3.90	1070	4.25	1116	4.62	1162	4.99	-	-	-	-	-	-	-	-	-	-
	6600	761	2.63	815	2.94	867	3.26	917	3.60	966	3.94	1014	4.29	1060	4.66	1104	5.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CU240	7200	659	2.10	714	2.37	767	2.65	817	2.94	866	3.23	912	3.52	957	3.82	998	4.13	1037	4.44	1076	4.76	1115	5.11	1154	5.47	1193	5.73	1230	6.10	1265	6.46
	8000	719	2.81	770	3.11	818	3.42	865	3.73	910	4.05	954	4.37	997	4.70	1038	5.03	1078	5.36	1115	5.71	1151	6.08	1186	6.46	1220	6.84	1254	7.23	-	-
	8800	782	3.67	828	4.00	873	4.34	916	4.68	959	5.02	1000	5.37	1040	5.73	1079	6.09	1117	6.45	1154	6.81	1190	7.18	-	-	-	-	-	-	-	-

NOTE:
At higher evaporator airflows and wet bulb conditions, condensate carry-over may occur. Adjust airflow downward as necessary
Values include pressure drop from wet coil and clean filters.
Shaded areas indicate oversize motors.

TABLE 6: EVAPORATOR BLOWER PERFORMANCE - DATA CU300 - 25 TON MODEL

MODEL #	SUPPLY CFM	EXTERNAL STATIC PRESSURE - Inches - W.C.																			
		0.2		0.4		0.6		0.8		1.0		1.2		1.4		1.6		1.8		2.0	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
CU300	9000	800	3.93	846	4.27	890	4.61	932	4.96	974	5.32	1014	5.67	1053	6.03	1092	6.40	1129	6.77	1166	7.14
	10000	878	5.29	920	5.67	960	6.05	999	6.43	1037	6.82	1074	7.21	1111	7.61	1147	8.01	1182	8.41	1216	8.82
	11000	958	6.95	996	7.37	1033	7.79	1069	8.21	1104	8.63	1139	9.05	1173	9.48	1206	9.92	-	-	-	-

NOTE:
At higher evaporator airflows and wet bulb conditions, condensate carry-over may occur. Adjust airflow downward as necessary
Values include pressure drop from wet coil and clean filters.
Shaded areas indicate oversize motors.

TABLE 7: WATERSIDE PRESSURE DROP - CU MODELS

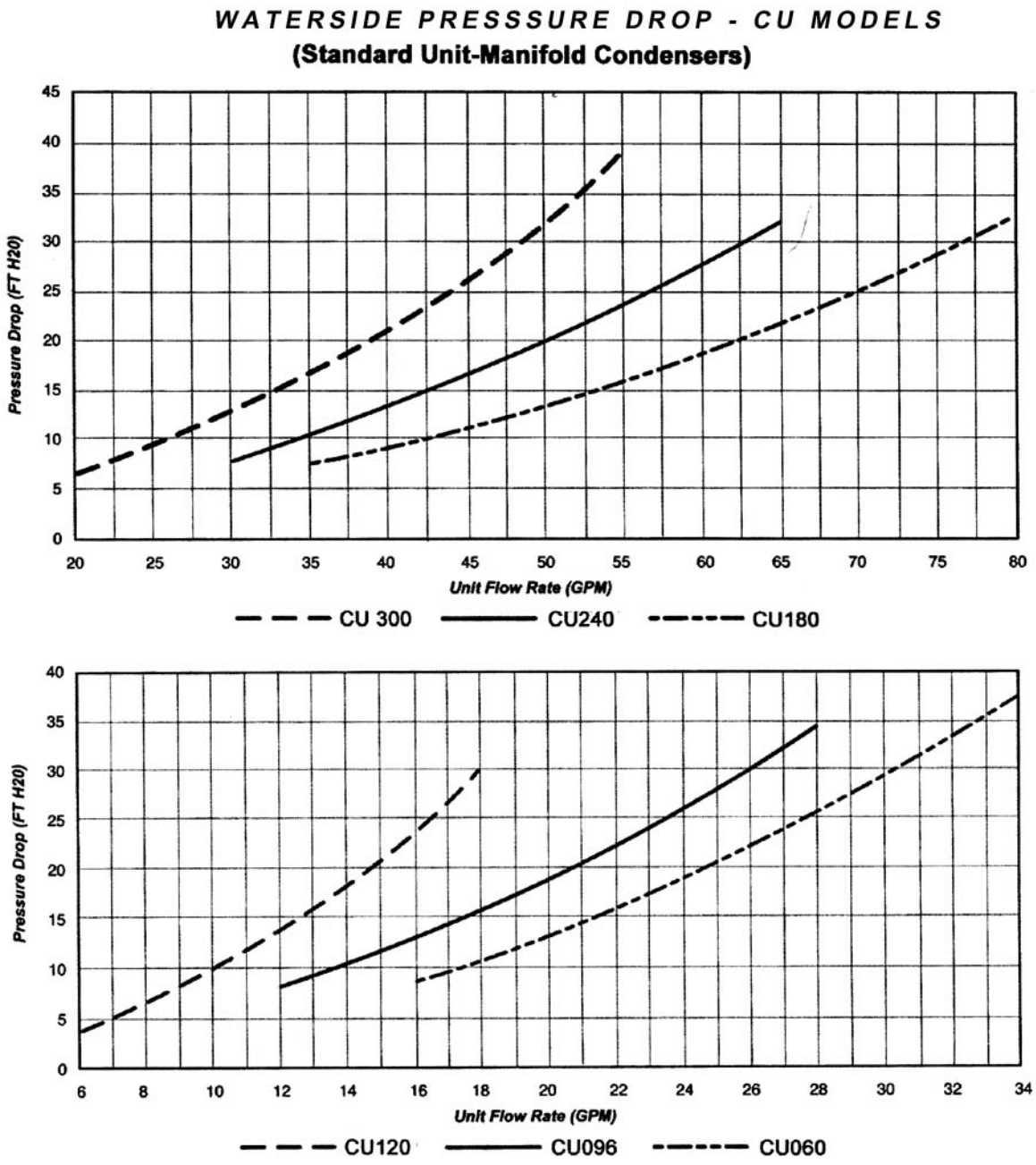


TABLE 8: WATER PRESSURE DROP DATA - CH MODELS

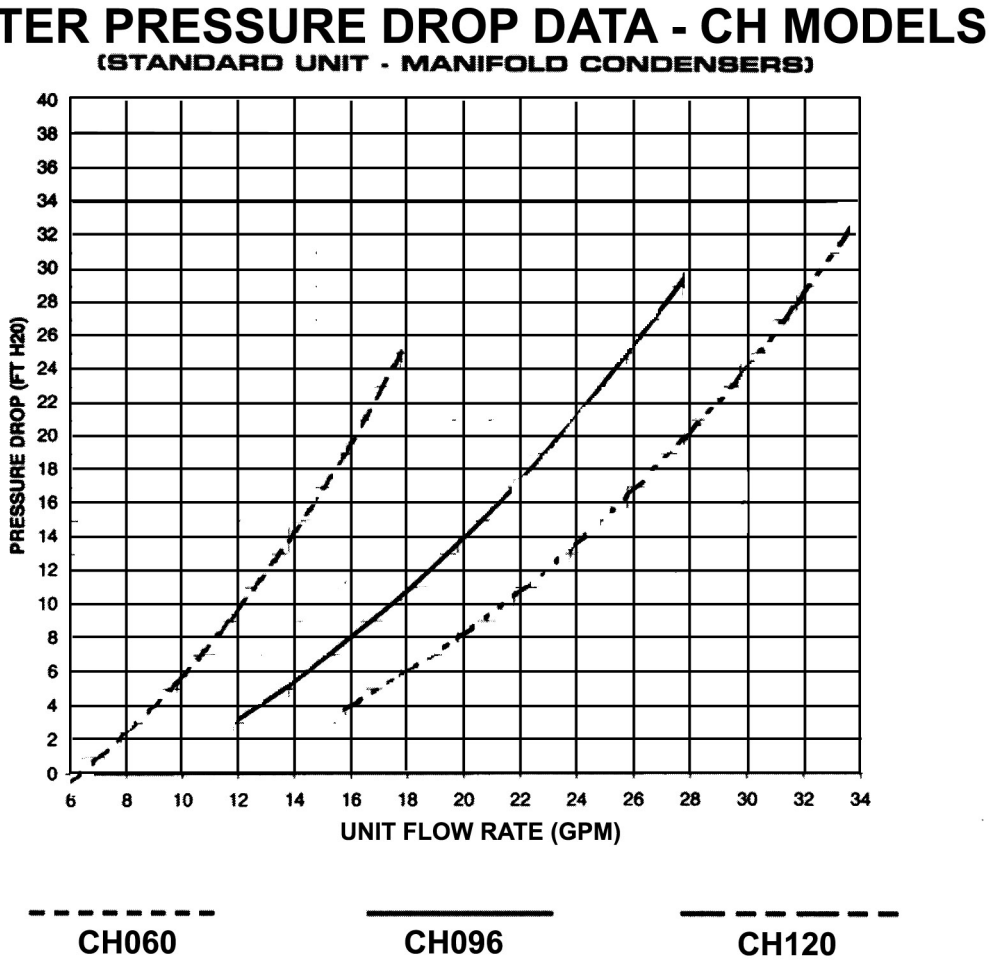


TABLE 9: COOLING PERFORMANCE DATA - CH 5-10 TON HORIZONTAL MODELS

CH060 5 TON 2000 CFM		9 GPM									15 GPM								
		EWT									EWT								
		65°F			85°F			105°F			65°F			85°F			105°F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62°F	75°F	63.2	48.3	2.88	59.7	54.5	3.66	55.1	44.0	4.67	64.0	48.7	2.72	60.5	46.2	3.47	56.1	44.6	4.42
	80°F	63.2	59.5	2.88	59.7	57.6	3.66	55.1	55.1	4.67	64.0	60.0	2.72	60.5	58.3	3.47	56.1	55.8	4.42
	85°F	66.6	66.6	2.92	62.8	62.8	3.71	58.0	58.0	4.70	67.4	67.4	2.74	63.9	63.9	3.49	59.2	59.2	4.43
67°F	75°F	67.4	38.6	2.93	63.0	36.8	3.72	58.1	34.8	4.70	68.6	39.1	2.75	64.1	37.4	3.50	59.3	35.3	4.44
	80°F	67.4	49.0	2.93	63.0	47.3	3.72	58.1	45.3	4.70	68.6	49.6	2.75	64.1	47.8	3.50	59.3	45.8	4.44
	85°F	67.4	60.3	2.93	63.0	58.6	3.72	58.1	56.7	4.70	68.6	60.8	2.75	64.1	59.1	3.50	59.3	57.2	4.44
72°F	75°F	72.4	27.8	3.00	67.7	26.4	3.79	62.4	24.5	4.78	74.0	28.3	2.80	69.1	27.0	3.55	63.8	25.1	4.49
	80°F	72.4	38.8	3.00	67.7	36.8	3.79	62.4	35.0	4.78	74.0	39.3	2.80	69.1	37.5	3.55	63.8	35.6	4.49
	85°F	72.4	49.2	3.00	67.7	47.3	3.79	62.4	45.5	4.78	74.0	49.7	2.80	69.1	47.9	3.55	63.8	46.1	4.49
CH096 8 TON 3200 CFM		15 GPM									24 GPM								
		EWT									EWT								
		65°F			85°F			105°F			65°F			85°F			105°F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62°F	75°F	100.9	77.6	4.43	94.3	74.9	5.66	88.4	70.0	7.24	101.1	78.4	4.21	95.7	74.6	5.38	89.8	71.0	6.86
	80°F	100.9	95.4	4.43	94.3	92.7	5.66	88.4	88.4	7.24	101.1	96.2	4.21	95.7	93.3	5.38	89.8	89.8	6.86
	85°F	105.6	105.6	4.47	100.0	100.0	5.72	92.4	92.4	7.26	106.8	106.8	4.23	101.3	101.3	5.40	94.2	94.2	6.90
67°F	75°F	106.8	62.3	4.48	100.1	59.4	5.73	92.6	56.4	7.27	108.3	62.9	4.24	101.8	59.9	5.41	94.4	56.9	6.91
	80°F	106.8	79.0	4.48	100.1	76.1	5.73	92.6	73.2	7.27	108.3	79.5	4.24	101.8	76.7	5.41	94.4	73.7	6.91
	85°F	106.8	96.8	4.48	100.1	93.9	5.73	92.6	91.0	7.27	108.3	97.3	4.24	101.8	94.5	5.41	94.4	91.6	6.91
72°F	75°F	115.1	45.6	4.55	108.0	42.8	5.76	99.8	39.8	7.35	116.8	46.2	4.25	110.0	43.4	5.42	101.8	40.6	6.94
	80°F	115.1	62.2	4.55	108.0	59.5	5.76	99.8	56.6	7.35	116.8	62.8	4.25	110.0	60.1	5.42	101.8	57.4	6.94
	85°F	115.1	78.9	4.55	108.0	76.3	5.76	99.8	73.4	7.35	116.8	79.4	4.25	110.0	76.8	5.42	101.8	74.2	6.94
CH120 10 TON 4000 CFM		18 GPM									30 GPM								
		EWT									EWT								
		65°F			85°F			105°F			65°F			85°F			105°F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62°F	75°F	123.6	95.2	5.73	116.8	91.1	7.30	96.0	86.2	9.32	125.2	96.0	5.42	118.5	92.0	6.91	110.6	88.4	8.83
	80°F	123.6	116.7	5.73	116.8	113.9	7.30	109.7	109.7	9.35	125.2	117.5	5.42	118.5	114.8	6.91	110.6	110.6	8.83
	85°F	131.1	131.1	5.82	123.4	123.4	7.35	114.5	114.5	9.40	132.8	132.8	5.48	125.8	125.8	6.96	116.5	116.5	8.86
67°F	75°F	132.2	76.2	5.84	123.6	75.2	7.39	114.7	69.0	9.40	134.1	77.2	5.49	126.0	73.8	6.97	116.9	70.0	8.87
	80°F	132.2	96.3	5.84	123.6	95.4	7.39	114.7	89.4	9.40	134.1	97.3	5.49	126.0	94.0	6.97	116.9	90.4	8.87
	85°F	132.2	118.0	5.84	123.6	117.0	7.39	114.7	111.0	9.40	134.1	119.0	5.49	126.0	115.7	6.97	116.9	112.1	8.87
72°F	75°F	142.4	56.2	5.96	133.2	52.8	7.53	123.3	49.0	9.55	144.9	57.2	5.57	135.8	53.8	7.06	126.0	50.3	8.95
	80°F	142.4	76.1	5.96	133.2	72.8	7.53	123.3	69.2	9.55	144.9	77.1	5.57	135.8	73.8	7.06	126.0	70.4	8.95
	85°F	142.4	96.3	5.96	133.2	93.1	7.53	123.3	89.6	9.55	144.9	97.2	5.57	135.8	94.1	7.06	126.0	90.7	8.95

TABLE 10: COOLING PERFORMANCE DATA - CU 5-20 TON VERTICAL MODELS

CU060 5 TON 2000 CFM		9 GPM									15 GPM								
		EWT									EWT								
		65◦F			85◦F			105◦F			65◦F			85◦F			105◦F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62◦F	75◦F	62.1	48.9	2.87	58.3	47.2	3.65	54.4	45.4	4.67	63.1	49.4	2.71	59.2	47.5	3.45	62.1	48.9	2.87
	80◦F	62.1	58.2	2.87	58.3	57.0	3.65	54.4	54.1	4.67	63.1	58.7	2.71	59.2	56.7	3.45	62.1	58.2	2.87
	85◦F	65.4	65.4	2.91	61.5	61.5	3.71	57.8	57.8	4.74	66.3	66.3	2.74	62.5	62.5	3.53	65.4	65.4	2.91
67◦F	75◦F	66.4	38.1	2.93	62.0	36.9	3.71	57.2	34.9	4.70	67.6	39.3	2.75	63.3	37.5	3.49	66.4	38.1	2.93
	80◦F	66.4	48.0	2.93	62.0	46.2	3.71	57.2	44.3	4.70	67.6	48.5	2.75	63.3	46.7	3.49	66.4	48.0	2.93
	85◦F	66.4	57.8	2.93	62.0	55.7	3.71	57.2	53.7	4.70	67.6	58.4	2.75	63.3	56.3	3.49	66.4	57.8	2.93
72◦F	75◦F	71.4	28.7	2.99	66.6	27.4	3.77	61.4	25.5	4.77	72.7	29.1	2.79	68.0	28.0	3.53	71.4	28.7	2.99
	80◦F	71.4	38.1	2.99	66.6	36.2	3.77	61.4	34.3	4.77	72.7	38.6	2.79	68.0	36.8	3.53	71.4	38.1	2.99
	85◦F	71.4	47.3	2.99	66.6	45.6	3.77	61.4	43.7	4.77	72.7	47.8	2.79	68.0	46.1	3.53	71.4	47.3	2.99
CU096 8 TON 3200 CFM		15 GPM									24 GPM								
		EWT									EWT								
		65◦F			85◦F			105◦F			65◦F			85◦F			105◦F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62◦F	75◦F	99.0	78.9	4.44	93.9	76.4	5.65	87.2	73.4	7.22	100.3	79.3	4.21	94.9	76.8	5.38	99.0	78.9	4.44
	80◦F	99.0	93.9	4.44	93.9	91.5	5.65	87.2	87.2	7.22	100.3	94.7	4.21	94.9	92.0	5.38	99.0	93.9	4.44
	85◦F	104.2	104.2	4.50	98.8	98.8	5.71	92.4	92.4	7.32	105.4	105.4	4.25	100.0	100.0	5.44	104.2	104.2	4.50
67◦F	75◦F	105.9	62.3	4.47	99.1	59.4	5.69	91.4	56.2	7.26	107.3	62.9	4.24	100.6	60.1	5.41	105.9	62.3	4.47
	80◦F	105.9	77.5	4.47	99.1	74.6	5.69	91.4	71.5	7.26	107.3	78.0	4.24	100.6	75.2	5.41	105.9	77.5	4.47
	85◦F	105.9	93.2	4.47	99.1	90.2	5.69	91.4	86.8	7.26	107.3	93.8	4.24	100.6	91.0	5.41	105.9	93.2	4.47
72◦F	75◦F	113.6	45.7	4.54	106.5	43.9	5.76	98.3	40.9	7.33	115.3	46.4	4.28	108.2	44.7	5.43	113.6	45.7	4.54
	80◦F	113.6	61.2	4.54	106.5	58.4	5.76	98.3	55.3	7.33	115.3	61.8	4.28	108.2	59.1	5.43	113.6	61.2	4.54
	85◦F	113.6	76.3	4.54	106.5	73.6	5.76	98.3	70.6	7.33	115.3	76.9	4.28	108.2	74.3	5.43	113.6	76.3	4.54
CU120 10 TON 4000 CFM		18 GPM									30 GPM								
		EWT									EWT								
		65◦F			85◦F			105◦F			65◦F			85◦F			105◦F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62◦F	75◦F	125.4	99.6	5.76	118.8	96.6	7.32	109.7	92.5	9.35	127.3	100.6	5.43	120.4	97.3	6.93	125.4	99.6	5.76
	80◦F	125.4	118.6	5.76	118.8	115.4	7.32	109.7	109.7	9.35	127.3	119.6	5.43	120.4	116.7	6.93	125.4	118.6	5.76
	85◦F	132.4	132.4	5.86	125.2	125.2	7.52	117.0	117.0	9.48	134.2	134.2	5.47	127.1	127.1	7.07	132.4	132.4	5.86
67◦F	75◦F	134.2	78.9	5.86	125.7	75.3	7.43	115.8	71.2	9.41	136.5	79.9	5.50	127.8	76.1	6.98	134.2	78.9	5.86
	80◦F	134.2	98.0	5.86	125.7	94.4	7.43	115.8	90.5	9.41	136.5	98.9	5.50	127.8	95.4	6.98	134.2	98.0	5.86
	85◦F	134.2	117.7	5.86	125.7	114.0	7.43	115.8	109.7	9.41	136.5	118.8	5.50	127.8	114.8	6.98	134.2	117.7	5.86
72◦F	75◦F	144.4	58.1	5.98	134.4	55.7	7.55	124.4	52.0	9.55	147.0	58.8	5.53	137.5	55.6	7.08	144.4	58.1	5.98
	80◦F	144.4	77.6	5.98	134.4	73.8	7.55	124.4	69.9	9.55	147.0	78.5	5.53	137.5	75.0	7.08	144.4	77.6	5.98
	85◦F	144.4	96.6	5.98	134.4	93.0	7.55	124.4	89.3	9.55	147.0	97.9	5.53	137.5	94.1	7.08	144.4	96.6	5.98
CU180 15 TON 6000 CFM		27 GPM									45 GPM								
		EWT									EWT								
		65◦F			85◦F			105◦F			65◦F			85◦F			105◦F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62◦F	75◦F	185.2	146.0	9.14	175.0	141.3	11.25	163.0	136.1	14.03	187.5	147.0	8.65	177.4	142.3	10.64	185.2	146.0	9.14
	80◦F	185.2	173.9	9.14	175.0	169.7	11.25	163.0	162.4	14.03	187.5	175.3	8.65	177.4	170.2	10.64	185.2	173.9	9.14
	85◦F	194.6	194.6	9.41	184.8	184.8	11.54	172.8	172.8	14.28	197.8	197.8	8.90	187.8	187.8	10.94	194.6	194.6	9.41
67◦F	75◦F	197.2	115.5	9.37	185.0	110.4	11.44	171.2	104.5	14.24	200.6	116.8	8.87	188.6	111.8	10.80	197.2	115.5	9.37
	80◦F	197.2	143.0	9.37	185.0	138.1	11.44	171.2	132.6	14.24	200.6	144.3	8.87	188.6	139.7	10.80	197.2	143.0	9.37
	85◦F	197.2	172.2	9.37	185.0	166.8	11.44	171.2	161.0	14.24	200.6	173.9	8.87	188.6	168.5	10.80	197.2	172.2	9.37
72◦F	75◦F	211.5	86.3	9.66	198.2	81.1	11.75	183.5	75.4	14.56	215.4	88.1	9.11	202.4	82.8	11.03	211.5	86.3	9.66
	80◦F	211.5	109.5	9.66	198.2	104.4	11.75	183.5	98.8	14.56	215.4	111.1	9.11	202.4	105.9	11.03	211.5	109.5	9.66
	85◦F	211.5	134.1	9.66	198.2	129.1	11.75	183.5	123.6	14.56	215.4	135.6	9.11	202.4	130.6	11.03	211.5	134.1	9.66
CU240 20 TON 8000 CFM		36 GPM									60 GPM								
		EWT									EWT								
		65◦F			85◦F			105◦F			65◦F			85◦F			105◦F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
62◦F	75◦F	236.4	174.8	12.57	223.8	169.5	15.22	207.2	162.4	18.63	239.5	176.1	12.07	226.6	170.7	14.56	236.4	174.8	12.57
	80◦F	236.4	207.6	12.57	223.8	202.3	15.22	207.2	195.1	18.63	239.5	208.9	12.07	226.6	203.4	14.56	236.4	207.6	12.57
	85◦F	240.6	240.6	12.70	229.8	229.8	15.27	217.8	217.8	18.86	242.6	242.6	12.85	231.8	231.8	14.66	240.6	240.6	12.70
67◦F	75◦F	256.6	139.3	12.97	243.0	134.1	15.53	226.0	128.0	19.00	259.5	140.5	12.41	246.8	135.7	14.84	256.6	139.3	12.97
	80◦F	256.6	171.9	12.97	243.0	166.8	15.53	226.0	160.8	19.00	259.5	173.1	12.41	246.8	168.5	14.87	256.6	171.9	12.97
	85◦F	256.6	204.6	12.97	243.0	199.5	15.53	226.0	193.7	19.00	259.5	205.8	12.45	246.8	201.2	14.87	256.6	204.6	12.97
72◦F	75◦F	277.9	103.3	13.45	263.3	98.5	16.04	245.3	92.5	19.46	281.7	105.0	12.83	268.0	100.1	15.25	277.9	103.3	13.45
	80◦F	277.9	135.8	13.45	263.3	131.2	16.04	245.3	125.5	19.46	281.7	138.2	12.83	268.0	133.0	15.25	277.9	135.8	13.45
	85◦F	277.9	168.2	13.45	263.3	163.9	16.04	245.3	158.4	19.46	281.7	171.4	12.83	268.0	165.8	15.25	277.9	168.2	13.45

TABLE 11: COOLING PERFORMANCE DATA - CU 300 25 TON VERTICAL MODELS

		GPM																	
CU300		45									75								
25 TON		EWT									EWT								
10000 CFM		65∝F			85∝F			105∝F			65∝F			85∝F			105∝F		
EWB	EDB	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW	TC	SC	kW
	75∝F	308.9	227.9	22.17	289.6	217.8	25.74	266.8	206.5	30.41	314.6	234.0	21.29	295.4	220.9	24.67	273.2	213.3	29.09
62∝F	80∝F	308.9	267.2	22.17	289.6	257.1	25.74	266.8	246.2	30.41	314.6	275.2	21.29	295.4	260.2	24.67	273.2	255.1	29.09
	85∝F	308.9	308.9	22.17	289.6	257.1	25.74	266.8	266.8	30.41	314.6	314.6	21.29	295.4	295.4	24.67	273.2	273.2	29.09
	75∝F	335.8	180.6	22.74	314.8	171.2	26.32	290.4	161.4	31.09	342.0	183.3	21.73	321.6	175.9	25.14	298.2	166.7	29.57
67∝F	80∝F	335.8	220.9	22.74	314.8	211.2	26.32	290.4	201.2	31.09	342.0	223.3	21.73	321.6	218.0	25.14	298.2	208.4	29.57
	85∝F	335.8	260.9	22.74	314.8	251.2	26.32	290.4	241.3	31.09	342.0	263.6	21.73	321.6	259.8	25.14	298.2	250.5	29.57
	75∝F	363.7	133.1	23.33	340.6	125.3	26.96	316.5	118.3	31.78	372.5	135.9	22.22	350.4	128.5	25.67	325.7	121.1	30.05
72∝F	80∝F	363.7	174.2	23.33	340.6	166.2	26.96	316.5	159.5	31.78	372.5	178.0	22.22	350.4	170.3	25.67	325.7	162.5	30.05
	85∝F	363.7	215.6	23.33	340.6	207.0	26.96	316.5	200.9	31.78	372.5	219.7	22.22	350.4	211.9	25.67	325.7	204.2	30.05

TABLE 12: WATER-SIDE ECONOMIZER COOLING PERFORMANCE DATA - CH 5-10 TON MODELS

UNIT	Air @ 80°F EDB, 67°F EWB		Water			Capacity [MBH]	
	CFM	PD [in WG]	Flow [GPM]	PD [PSI]	EWT [°F]	Total	Sensible
CH060	2000	0.16	9	1.4	45	50.8	39.9
					55	31.4	31.4
			15	3.8	45	64.5	45.0
					55	35.0	35.0
CH096	3200	0.14	15	1.4	45	87.4	66.5
					55	52.7	52.7
			24	3.4	45	107.1	73.8
					55	60.5	57.0
CH120	4000	0.21	18	1.9	45	104.6	80.3
					55	63.0	63.0
			30	5.2	45	127.3	88.6
					55	68.9	68.9

NOTE:

1. All economizer coils are 3R, 10 FPI, aluminum fins with copper tubes and headers.
2. For total system waterside pressure drop, add condenser pressure drop and waterside economizer coil pressure drop.

TABLE 13: WATER-SIDE ECONOMIZER COOLING PERFORMANCE DATA - CU 300 25 TON MODEL

UNIT	Air @ 80°F EDB, 67°F EWB		Water			Capacity [MBH]	
	CFM	PD [in WG]	Flow [GPM]	PD [PSI]	EWT [°F]	Total	Sensible
CU300	10000	0.39	45	3.0	45	265.2	200.0
					55	155.0	155.0
			75	8.4	45	317.0	219.1
					55	181.5	170.6

NOTE: All economizer coils are 3R, 10FPI, aluminum fins with copper tubes and headers.

For total system water-side pressure drop, add condenser pressure drop and water-side economizer coil pressure drop.

TABLE 14: STANDARD MOTORS CH 5-10 TON MODELS

MODEL	VOLTAGE		COMPRESSOR			EVAPORATOR			MIN. CCT.	MAX FUSE /
#		QTY		RLA	LRA	HP	FLA	RPM	AMPACITY	CCT. BKR. AMP
CU060	208-230/3/60	1	@	19.3	123.0	1.00	3.1	1800	27.23	45
	460/3/60	1	@	7.5	49.5	1.00	1.6	1800	10.98	15
	575/3/60	1	@	6.4	40.0	1.00	1.3	1800	9.30	15
CU096	208-230/3/60	2	@	13.9	88.0	1.50	4.4	1800	35.68	45
	460/3/60	2	@	7.1	44.0	1.50	2.2	1800	18.18	25
	575/3/60	2	@	5.4	34.0	1.50	1.8	1800	13.95	15
CU120	208-230/3/60	2	@	19.3	123.0	2.00	6.0	1800	49.43	60
	460/3/60	2	@	7.5	49.5	2.00	3.0	1800	19.88	25
	575/3/60	2	@	6.4	40.0	2.00	2.4	1800	16.80	20
CU180	208-230/3/60	2	@	25.0	164.0	3.00	8.4	1800	64.65	80
	460/3/60	2	@	12.0	100.0	3.00	4.2	1800	31.20	40
	575/3/60	2	@	9.7	90.0	3.00	3.4	1800	25.23	30
CU240	208-230/3/60	2	@	33.6	225.0	5.00	13.2	1800	88.80	110
	460/3/60	2	@	17.3	114.0	5.00	6.6	1800	45.53	60
	575/3/60	2	@	13.5	80.0	5.00	5.3	1800	35.68	45

NOTE: Single Phase CH060 located in 1-5 ton data.

TABLE 15: STANDARD MOTORS CU 5-20 TON MODELS

MODEL	VOLTAGE		COMPRESSOR			EVAPORATOR			MIN. CCT.	MAX FUSE /
#		QTY		RLA	LRA	HP	FLA	RPM	AMPACITY	CCT. BKR. AMP
CU060	208-230/3/60	1	@	19.3	123.0	1.00	3.1	1800	27.23	45
	460/3/60	1	@	7.5	49.5	1.00	1.6	1800	10.98	15
	575/3/60	1	@	6.4	40.0	1.00	1.3	1800	9.30	15
CU096	208-230/3/60	2	@	13.9	88.0	1.50	4.4	1800	35.68	45
	460/3/60	2	@	7.1	44.0	1.50	2.2	1800	18.18	25
	575/3/60	2	@	5.4	34.0	1.50	1.8	1800	13.95	15
CU120	208-230/3/60	2	@	19.3	123.0	2.00	6.0	1800	49.43	60
	460/3/60	2	@	7.5	49.5	2.00	3.0	1800	19.88	25
	575/3/60	2	@	6.4	40.0	2.00	2.4	1800	16.80	20
CU180	208-230/3/60	2	@	25.0	164.0	3.00	8.4	1800	64.65	80
	460/3/60	2	@	12.0	100.0	3.00	4.2	1800	31.20	40
	575/3/60	2	@	9.7	90.0	3.00	3.4	1800	25.23	30
CU240A	208-230/3/60	2	@	33.6	225.0	5.00	13.2	1800	88.80	110
	460/3/60	2	@	17.3	114.0	5.00	6.6	1800	45.53	60
	575/3/60	2	@	13.5	80.0	5.00	5.3	1800	35.68	45

NOTE: Single Phase unit found in smaller cabinet data 1-5 ton.

TABLE 16: STANDARD EVAPORATOR MOTORS - CU300 - 25 TON

MODEL	VOLTAGE	COMPRESSOR				EVAPORATOR			MIN. CCT.	MAX FUSE /
#		QTY		RLA	LRA	HP	FLA	RPM	AMPACITY	CCT. BKR. AMP
CU300	208-230/3/60	3	@	32.1	195.0	7.50	21.8	1800	126.13	150
	460/3/60	3	@	16.4	95.0	7.50	10.0	1800	63.30	70
	575/3/60	3	@	12.0	80.0	7.50	8.4	1800	47.40	50

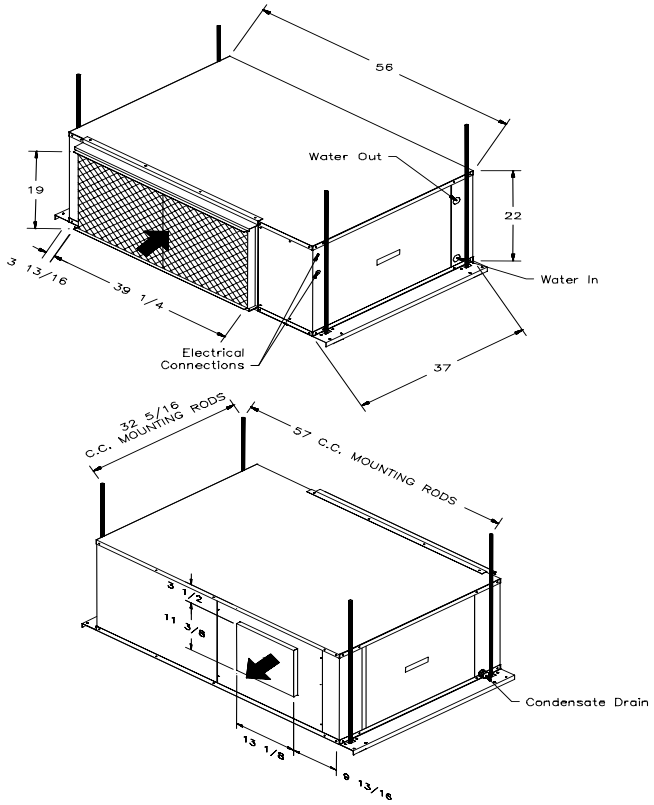


FIGURE 1 - DIMENSIONAL DATA - CH 5 TON HORIZONTAL MODEL

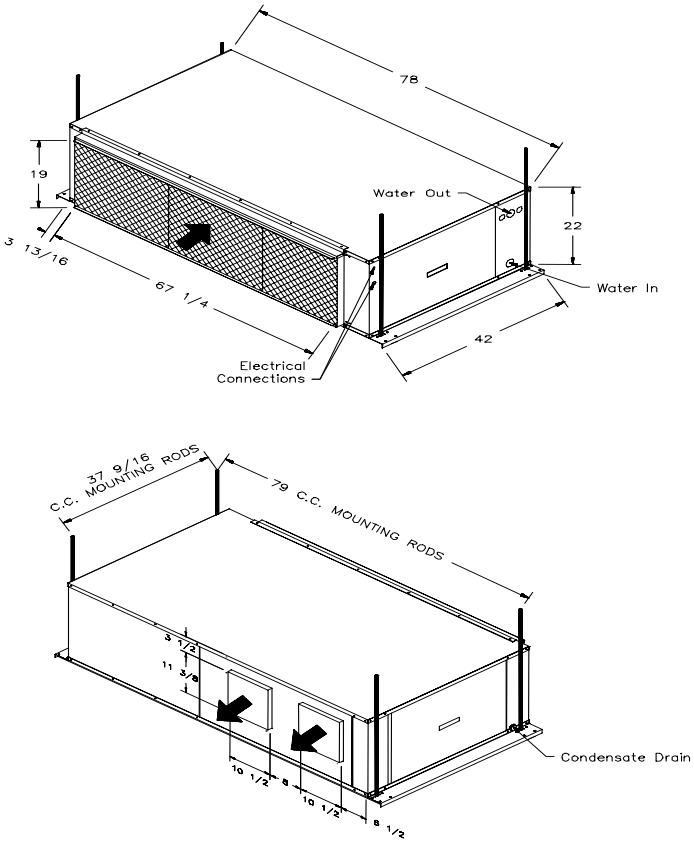


FIGURE 2 - DIMENSIONAL DATA - CH 8 & 10 TON HORIZONTAL MODELS

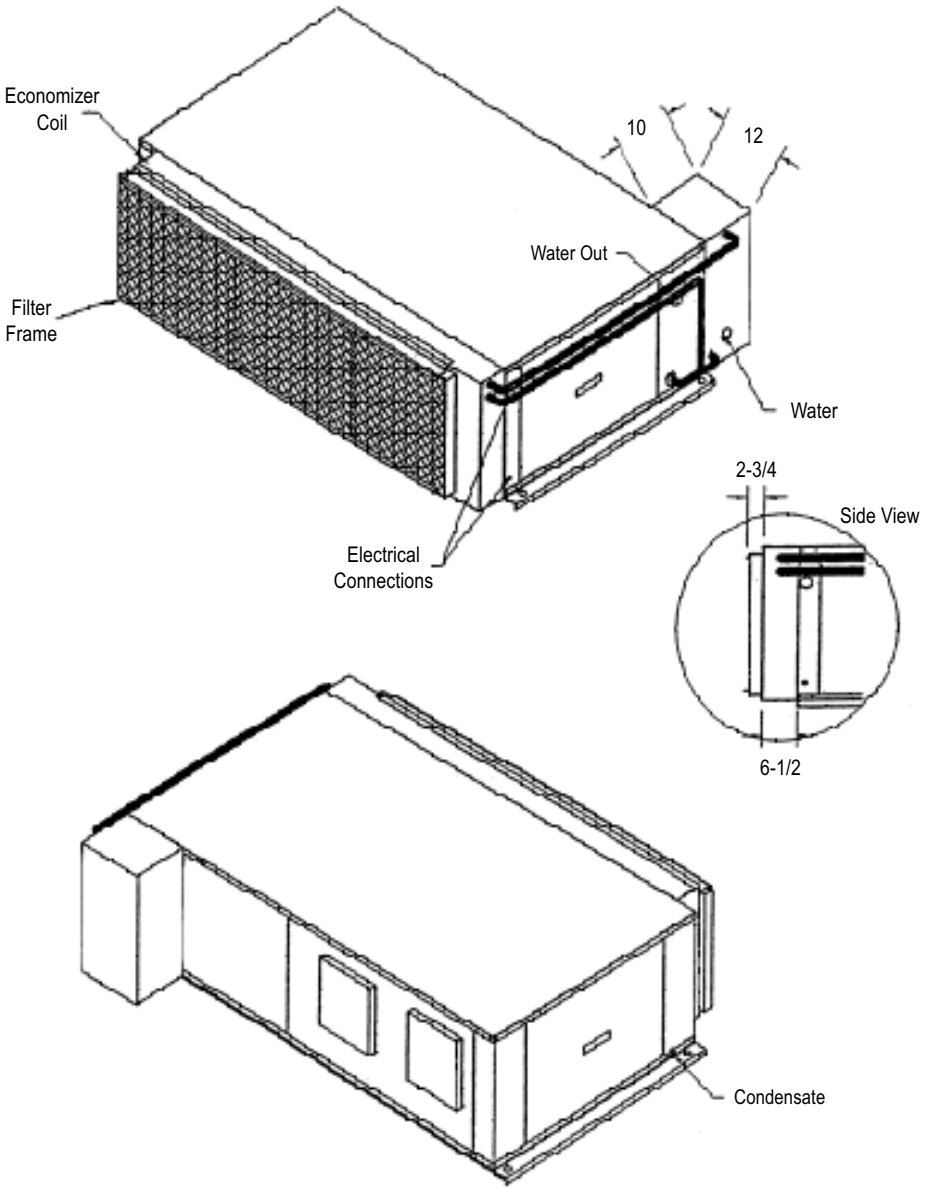


FIGURE 3 - PHYSICAL CONFIGURATION DATA - CH 8 & 10 TON WATER SIDE ECONOMIZER

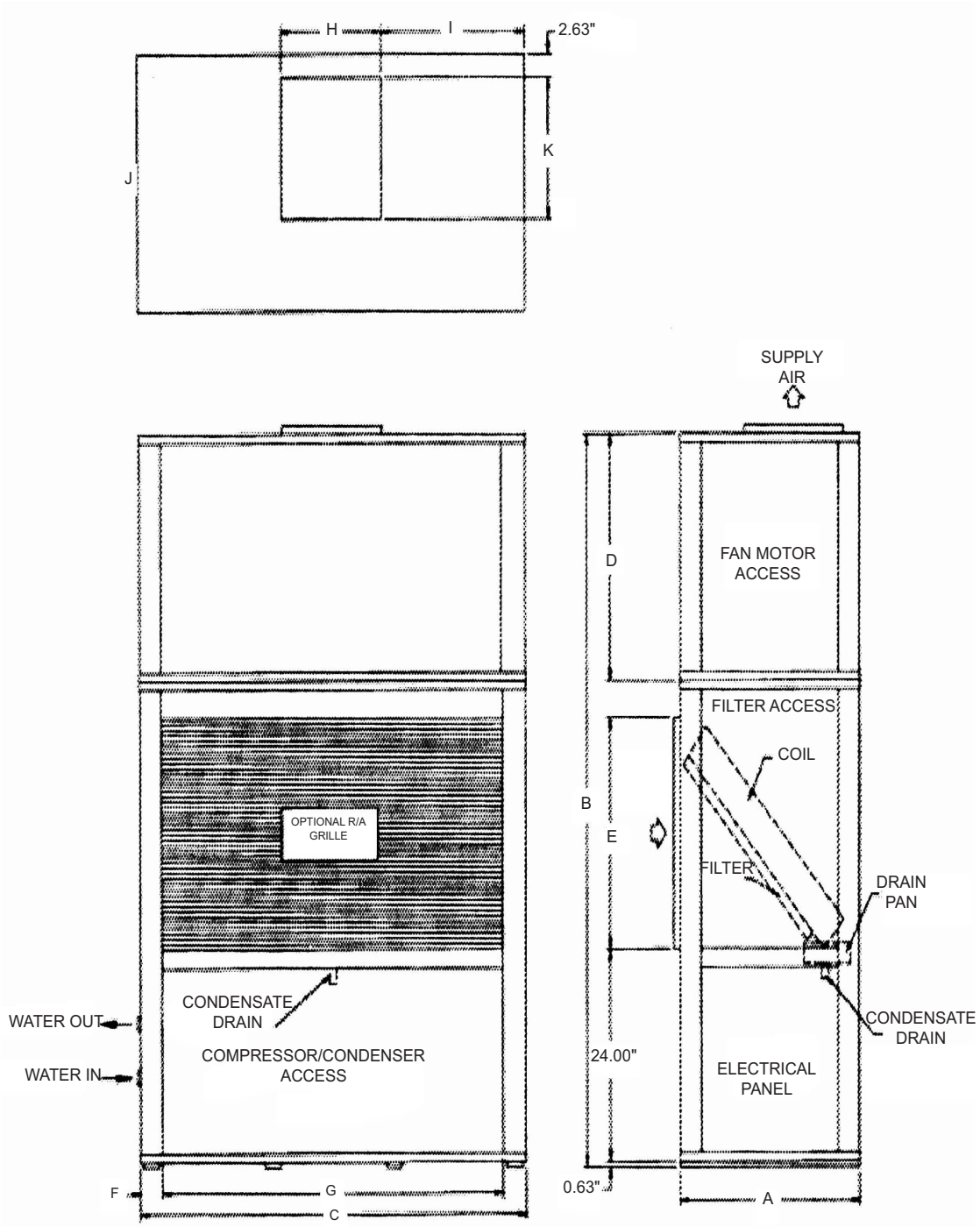


FIGURE 4 - DIMENSIONAL DATA - CU 5, 8, AND 10 TON VERTICAL MODELS

TABLE 17: DIMENSIONAL DATA - CU 5, 8, AND 10 TON VERTICAL MODELS

	A	B	C	D	RETURN AIR			SUPPLY AIR		
					E	F	G	H	J	K
CU060	26.00	72.00	42.00	23.00	20.00	4.00	34.00	12.25	14.88	13.50
CU096	29.00	82.00	64.00	27.00	25.00	4.00	56.00	14.75	24.63	15.88
CU120	29.00	82.00	64.00	27.00	25.00	4.00	56.00	14.75	24.63	15.88

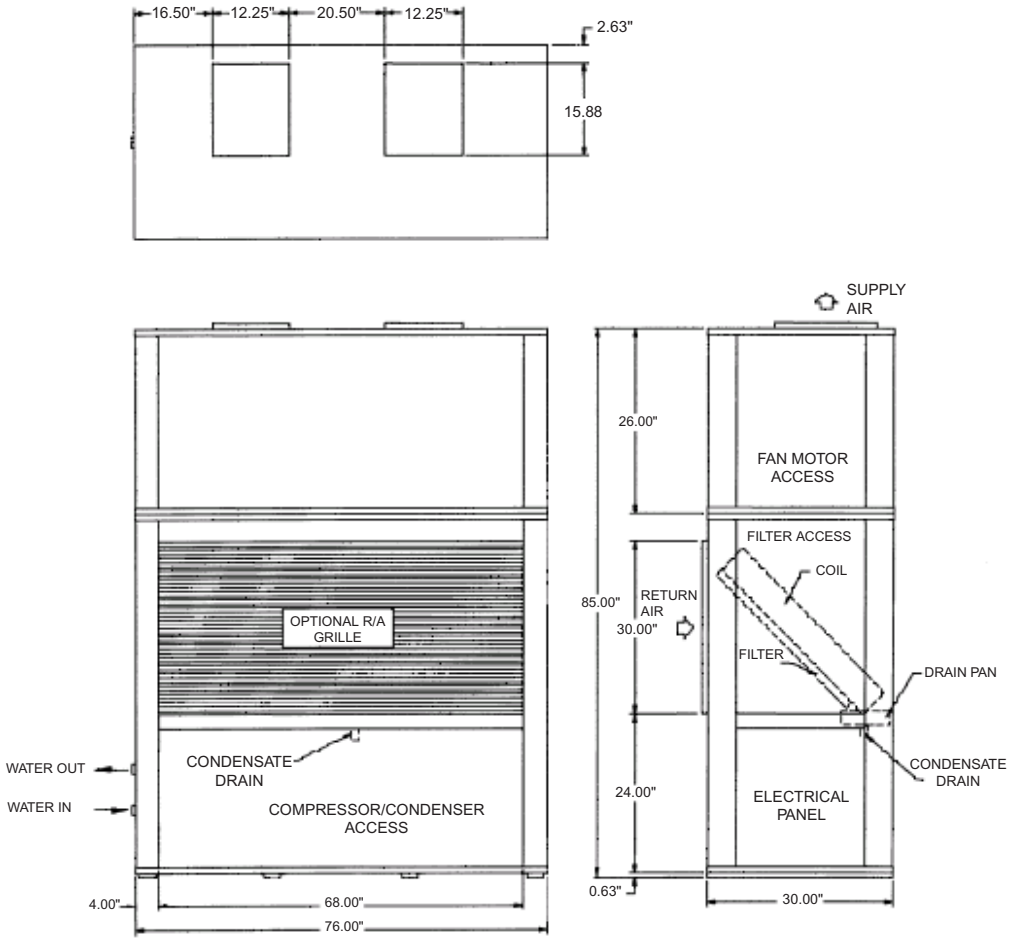


FIGURE 5 - DIMENSIONAL DATA - CU 15 TON VERTICAL MODEL

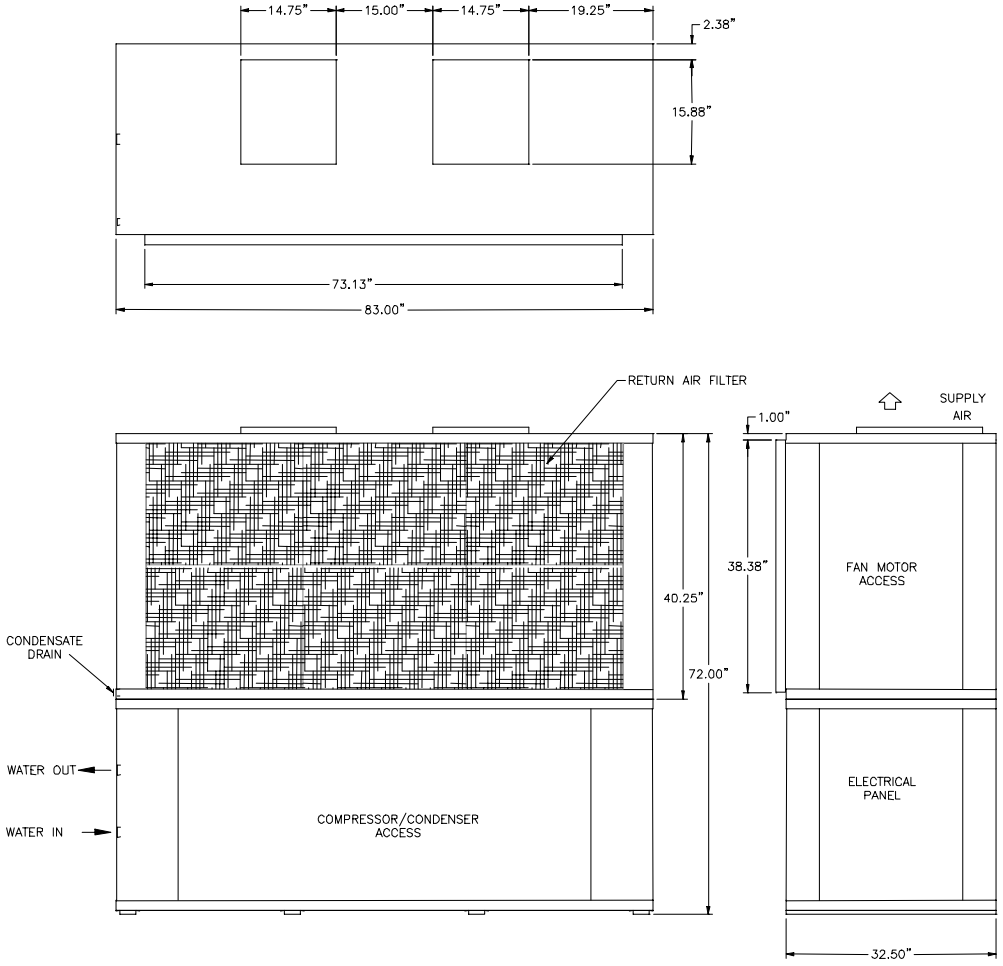


FIGURE 6 - DIMENSIONAL DATA - CU 20 TON VERTICAL MODEL

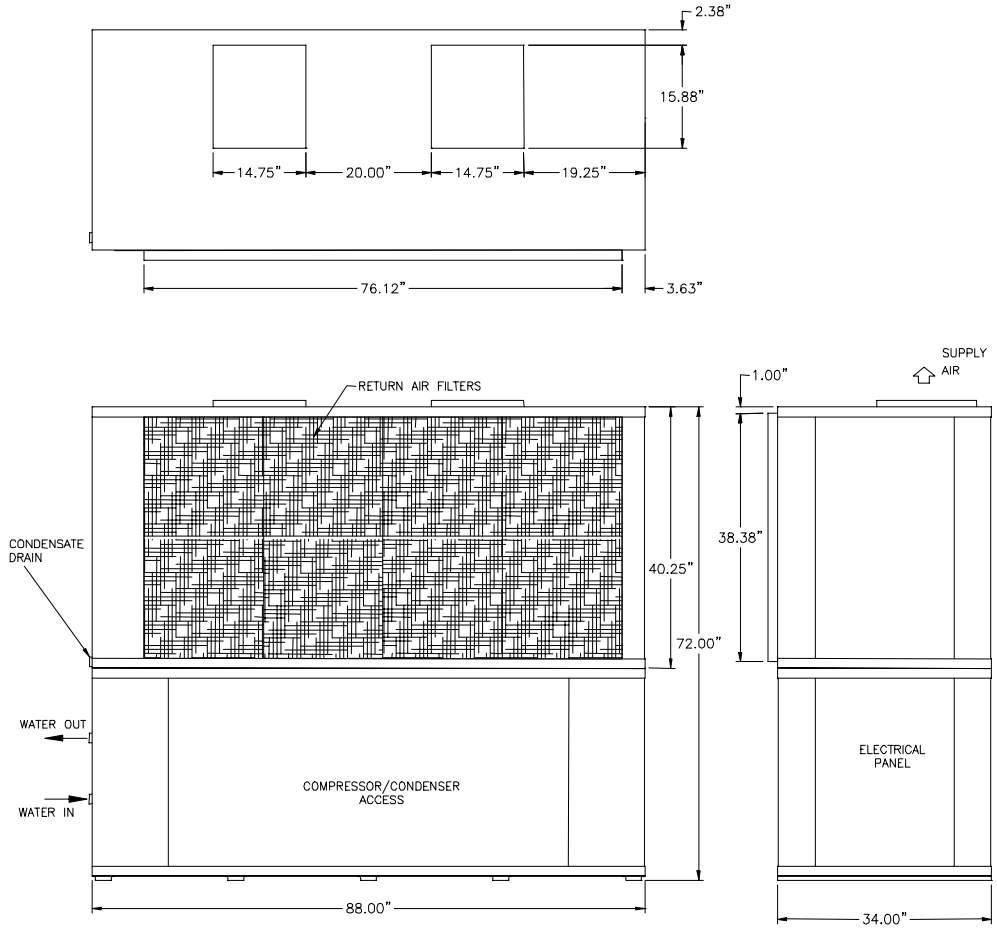


FIGURE 7 - DIMENSIONAL DATA - CU 25 TON VERTICAL MODEL

SUPPLY AIR/RETURN AIR CONFIGURATION

All models are field convertible for multiple supply return configurations. The 5 through 15 ton models feature a removable upper fan module that can be rotated 180∞for top rear discharge applications. In addition, the blower outlet panel may be interchanged with the front panel of the fan module. Interchanging these two panels allows horizontal fan discharge to either front or rear of the unit.

The blower outlet panel may also be interchanged on the 20 and 25 ton units to provide horizontal discharge.

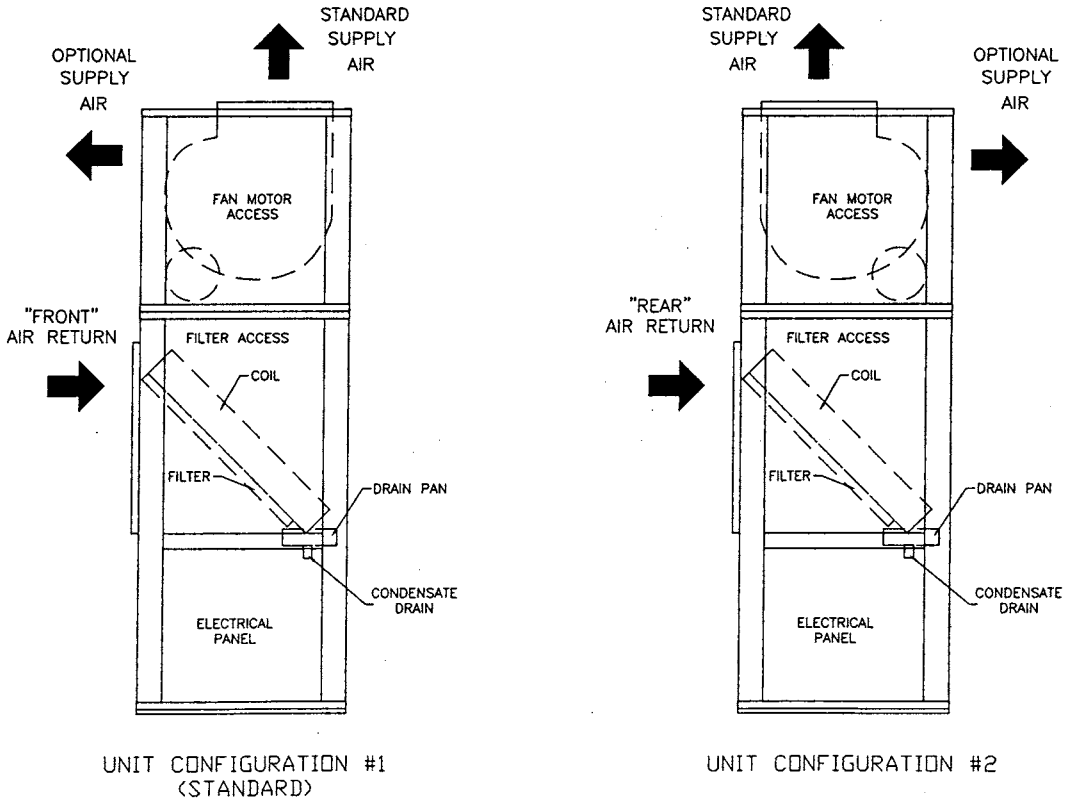
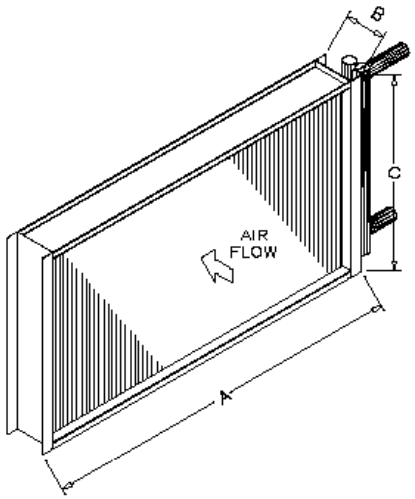
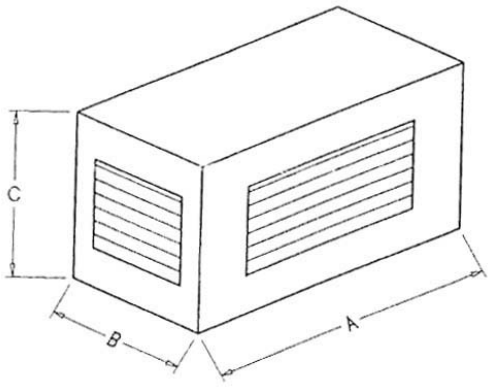


FIGURE 8 - SUPPLY AIR/RETURN AIR CONFIGURATION



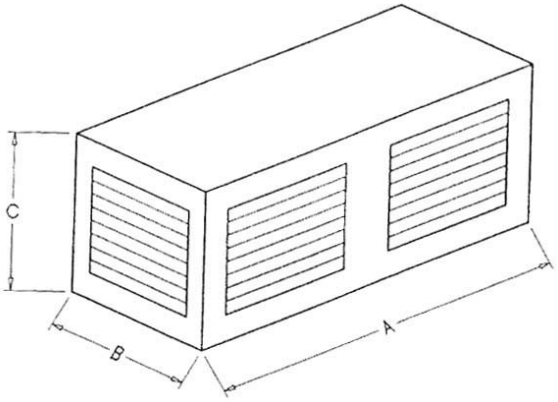
Hot Water and Steam Heating Coil Dimensions (Inches)

Unit Model	A	B	C	Inlet (MPT	Outlet (MPT)
CU060	37.50	5.50	23	1 1/2	1 1/2
CU096	59.50	5.50	28	1 1/2	1 1/2
CU120	59.50	5.50	28	1 1/2	1 1/2
CU180	71.50	5.50	33	2	2
CU240	76.50	5.50	40.13	2	2
CU300	79.50	5.50	40.13	2	2



Plenum Dimensions (Inches)

	A	B	C	Side Grill	Front Grill
5 Ton	42	26	20	16x12 (2x)	32x12
8/10 Ton	64	29	24	20x16 (2x)	38x16



Plenum Dimensions (Inches)

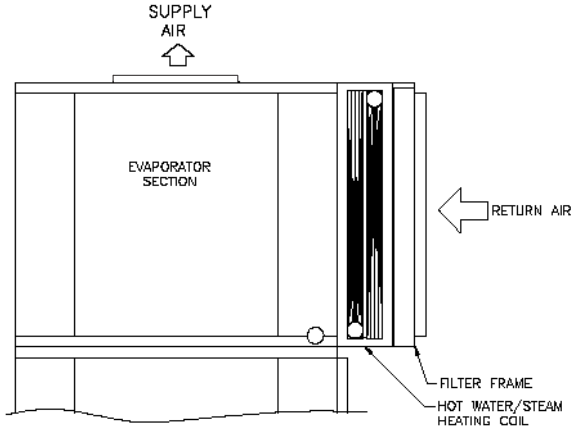
	A	B	C	Side Grill	Front Grill
15 Ton	64	29	24	20x18 (2x)	28x18 (2x)
20 Ton	83	32.5	28	24x20 (2x)	32x20 (2x)
25 Ton	88	34	28	24x20 (2x)	32x20 (2x)

FIGURE 9 - HOT WATER & STEAM HEATING COILS DIMENSIONAL DATA

Steam Coil Performance @ 2 PSIG

Unit Model	CFM	Entering Air Dry Bulb Temperature			
		10	30	50	70
CU060	1800	140	126.6	113.1	99.7
	2000	147.1	133	118.8	104.7
	2200	153.6	138.9	124.1	109.3
CU096	3000	258.3	233.4	208.6	183.8
	3200	266.6	241	215.3	189.7
	3400	274.5	248.1	221.8	195.4
CU120	3600	282.1	255	227.9	200.8
	4000	296.3	267.9	239.4	210.9
	4400	309.5	279.8	250.1	220.3
CU180	5400	425.8	384.9	344	303.1
	6000	447.4	404.4	361.4	318.4
	6600	467.3	422.4	377.5	332.6
CU240	7200	569.6	514.9	460.2	405.5
	8000	598.5	541	483.5	426
	8800	625.3	565.2	505.1	445.1
CU300	9000	645.8	583.7	521.7	459.6
	10000	677.1	612.1	547	481.9
	11000	706.1	638.2	570.4	502.6

- Steam Heating Coils are tube-in-tube ësteam distributingí type to eliminate risk of condensate freezing.
- Coils are constructed of 5/8 inch diameter outer copper tubes, with 3/8 inch diameter inner tubes. The outer tube is mechanically bonded to rippled aluminum plate fins. Coil casing is fabricated of heavy gauge galvanized sheet. Copper headers are complete with MPT connections.
- All coils are 1 row, 8 fins per inch.



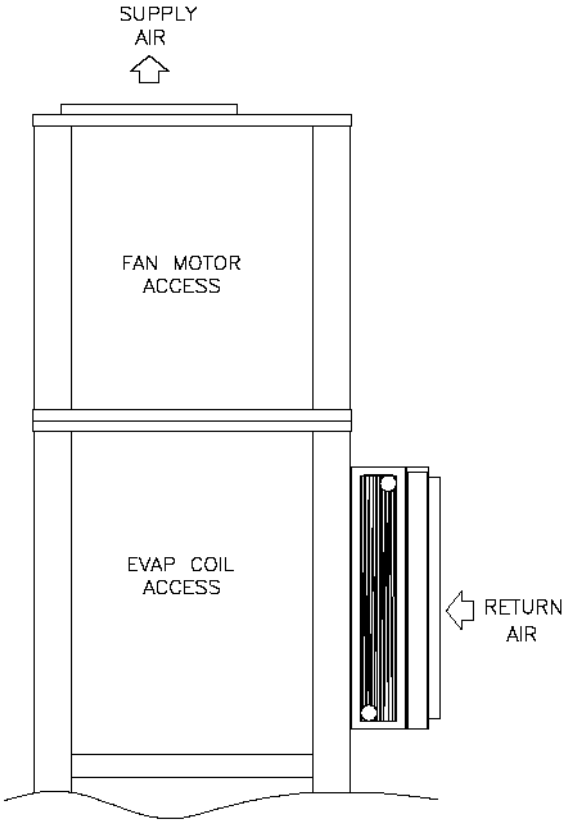
CU240 - 300

Hot Water Coil Performance

Unit Model	GPM	CFM	Temperature Difference*			
			70	90	110	130
CU060	10	1800	62.4	80.8	99.3	117.8
		2000	66.2	85.9	105.5	125.3
		2200	69.9	90.6	111.4	132.3
CU096	15	3000	111.6	144.3	177.1	209.9
		3200	116	150.1	184.1	218.3
		3400	120.2	155.5	190.9	226.3
CU120	15	3600	124.3	160.8	197.3	234
		4000	131.9	170.7	209.6	248.6
		4400	138.9	179.9	220.9	262
CU180	20	5400	183.5	237.3	291.2	345.2
		6000	194.6	251.7	308.9	366.2
		6600	204.8	265	325.3	385.7
CU240	35	7200	257.6	332.7	407.9	483.2
		8000	274.2	354.2	434.3	514.6
		8800	289.6	374.3	459	543.9
CU300	50	9000	313.2	404.3	495.5	586.8
		10000	333.6	430.7	527.9	625.3
		11000	352.5	455.3	558.2	661.2

* Temperature difference between entering water and entering air temperature.

- Hot Water Heating Coils are constructed of 1/2 inch diameter copper tubes, mechanically bonded to rippled aluminum plate fins. Coil casing is fabricated of heavy gauge galvanized sheet. Copper tube headers are complete with MPT connections.
- All coils are 2 row, 8 fins per inch.



CU060 - 180

FIGURE 10 - HOT WATER & STEAM HEATING COILS PERFORMANCE DATA

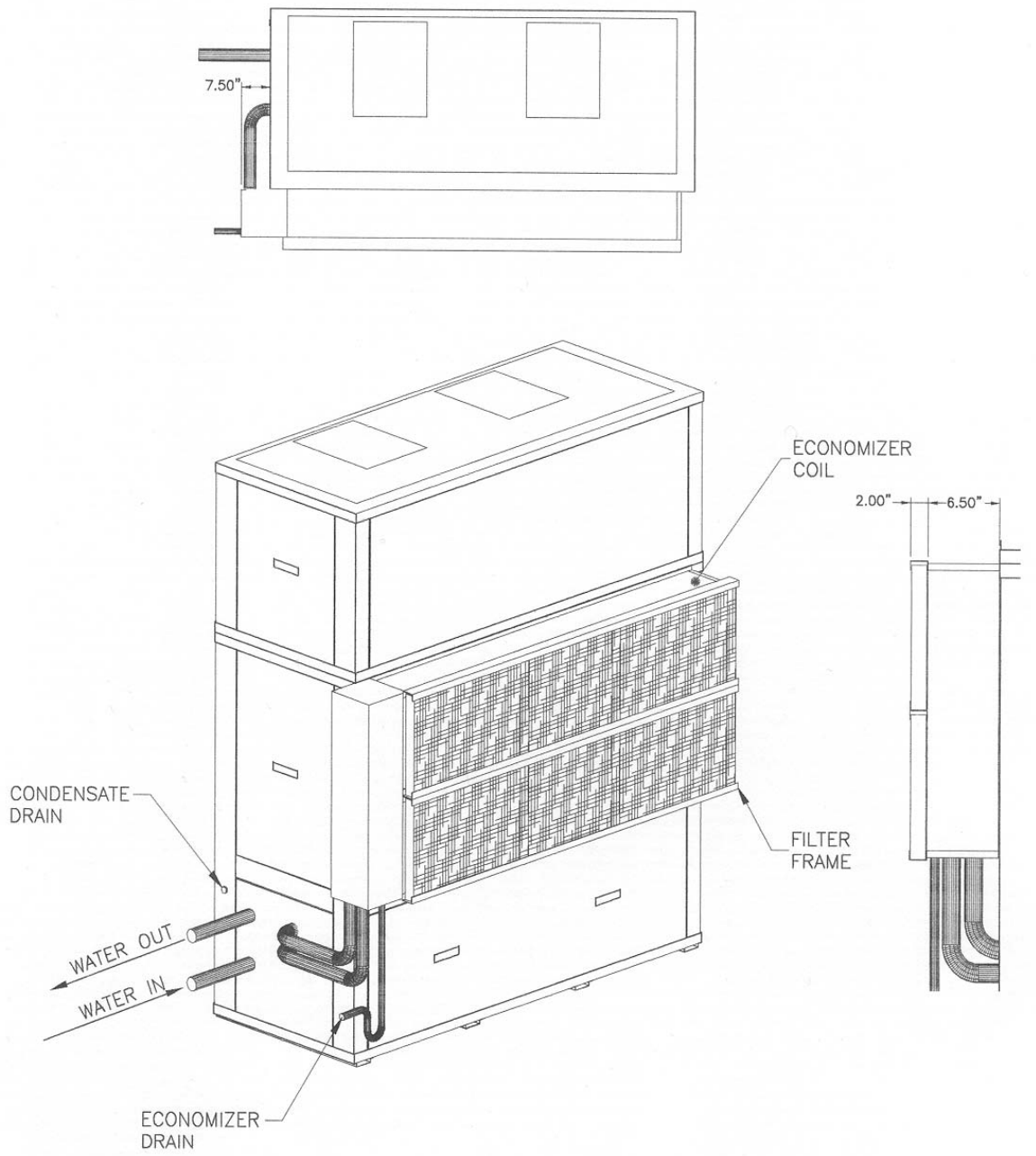


FIGURE 11 - TYPICAL WATER-SIDE ECONOMIZER PHYSICAL CONFIGURATION

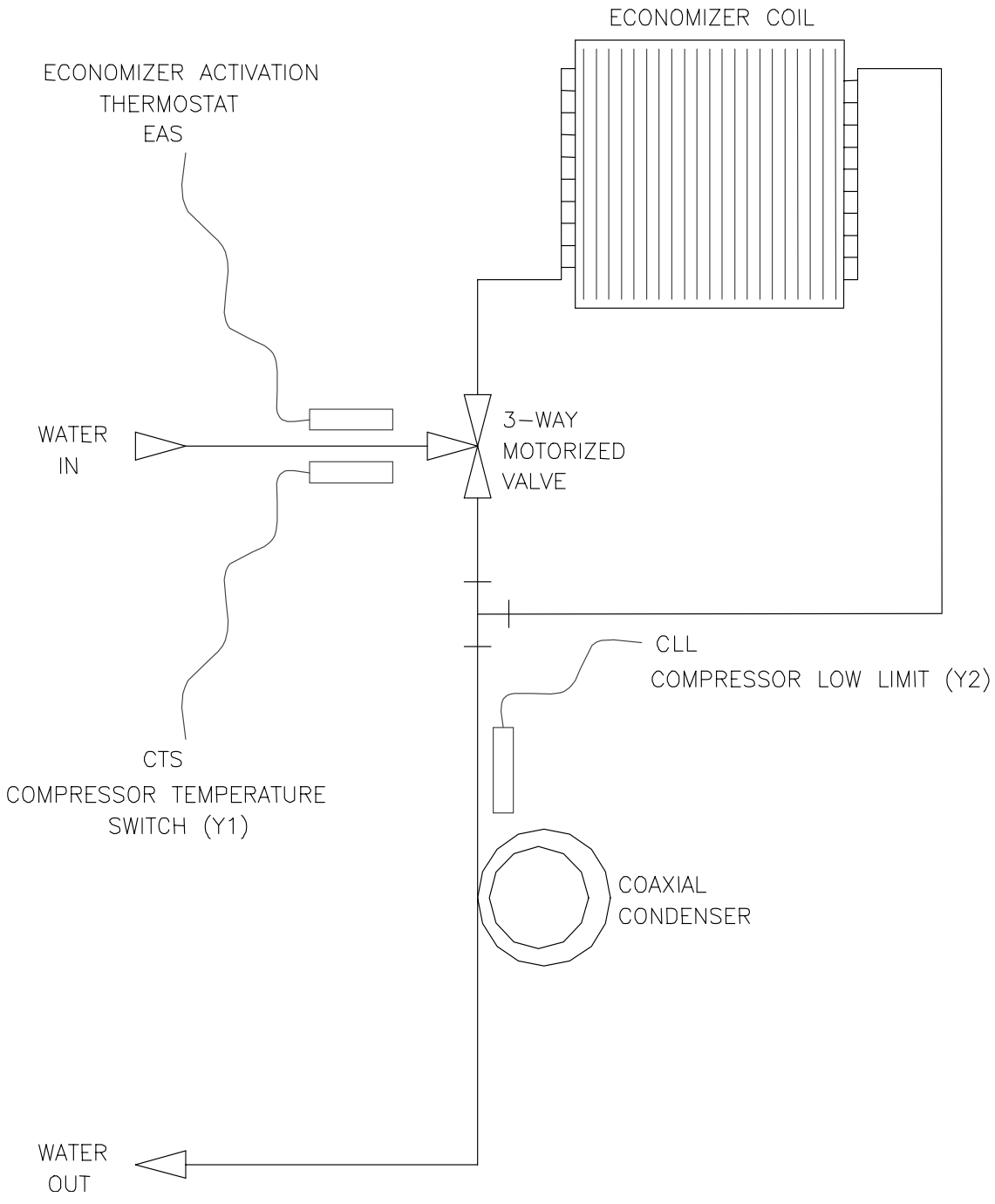
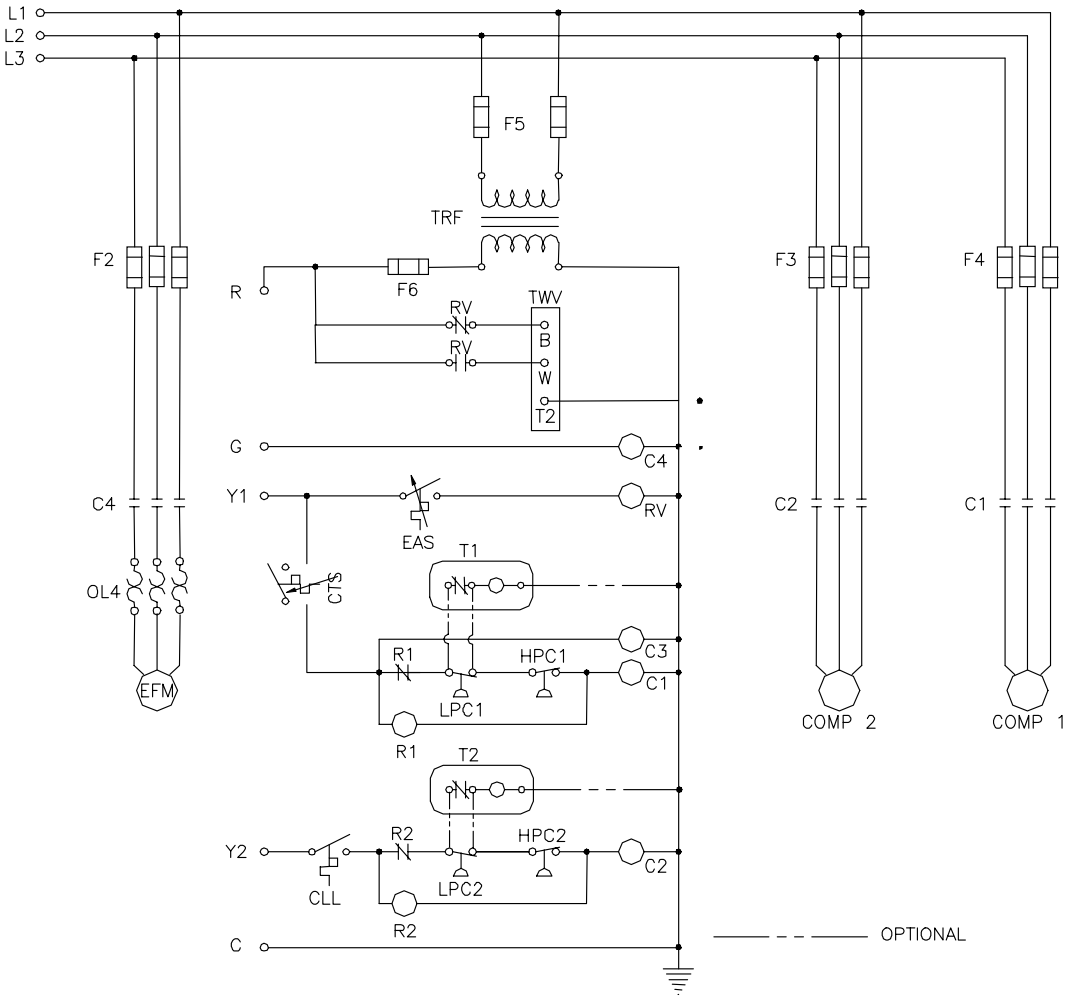


FIGURE 12 - WATER-SIDE ECONOMIZER PIPING SCHEMATIC



TB1	– LINE VOLTAGE TERMINAL BLOCK	OL4	– EVAP. FAN MOTOR OVERLOAD
TB2	– LOW VOLTAGE TERMINAL BLOCK	HPC1	– HIGH PRESSURE CUT–OUT (COMP 1)
EFM	– EVAPORATOR FAN MOTOR	LPC1	– LOW PRESSURE CUT–OUT (COMP 1)
COMP 1	– COMPRESSOR ONE	HPC2	– HIGH PRESSURE CUT–OUT (COMP 2)
COMP 2	– COMPRESSOR TWO	LPC2	– LOW PRESSURE CUT–OUT (COMP 2)
R1	– LOCK OUT RELAY (COMPRESSOR ONE)	TRF	– TRANSFORMER
R2	– LOCK OUT RELAY (COMPRESSOR TWO)	GRD	– GROUND
F2	– EVAP. FAN MOTOR FUSE	T1	– BYPASS TIMER 1 (WITH LOW AMBIENT DAMPER ONLY)
F3	– COMPRESSOR TWO FUSE	T2	– BYPASS TIMER 2 (WITH LOW AMBIENT DAMPER ONLY)
F4	– COMPRESSOR ONE FUSE	CCH1	– CRANKCASE HEATER (COMP 1)
F5	– TRANSFORMER PRIMARY FUSE	CCH2	– CRANKCASE HEATER (COMP 2)
F6	– TRANSFORMER SECONDARY FUSE	CLL	– COMP. LOW LIMIT CUT–OUT
C1	– COMPRESSOR ONE CONTACTOR	CTS	– COMP. TEMPERATURE SWITCH
C2	– COMPRESSOR TWO CONTACTOR	EAS	– ECONOMIZER ACTIVATION THERMOSTAT
C4	– EVAP. FAN MOTOR CONTACTOR	RV	– WATER VALVE RELAY
		TWV	– THREE–WAY VALVE ACTUATOR

FIGURE 13 - WATER-SIDE ECONOMIZER CONTROL - 15-20 TON VERTICAL (208-230 V/3PH/60HZ)

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